



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

the form of the usual scales. In one instance the central bud had developed a single—the lowest—internode, and bore at the top of this internode, in the axil of the first scale, a small lateral bud, thus making with the two lower lateral buds a group of four scaly buds in this leaf axil.

Possibly palæobotany may some day shed light on the evolution of scaly winter buds. So far the fossil branches of dicotyledenous plants have been practically ignored. In the future they will no doubt be used to give corroborative evidence to the testimony as given by leaves alone, and we may hope for the day when the winter buds, wherever preserved, will be carefully studied.

### Dropsical *Pelargoniums*.\*

For the past two or three years there has been an increased number of complaints made to the Experiment Station of a disease among the hot house *Pelargoniums*. Specimens received from at least a dozen places all agree in the chief essentials, while there are many variations in the details of appearance to the unassisted vision.

While the trouble is most noticeable upon the leaf blades it is by no means confined there. Upon the stem it shows itself in peculiar corky ridges which are not unfrequent upon the petioles. Upon the blades the usual appearance is that of numerous specks which seem to be supercharged with water giving to those parts a clear amber look when held up to the light. The first thought was of bacteria, there being a resemblance of the watery glands to specks found in the carnation leaves previously studied and known to be due to micro-organisms.

After making a full test for bacteria and failing to secure germs or any signs of contagion by inoculation it was concluded that the *Pelargoniums* were suffering from a dropsical affliction, and instead of the trouble being due to any parasite it seems to be entirely physiological. Photo-impressions were taken of the leaves showing different phases of the disorder.

In a green-house devoted entirely to *Pelargoniums* the trouble

---

\* Prepared for the Botanical Club, Madison, Wisconsin, August, 1893.

may be seen upon nearly all the plants, in which case the middle aged leaves show the water-soaked appearance to best advantage. Later on moulds of the black (*Macrosporum*, sp.) or gray (*Botrytis*) sorts come in to obscure the view and hasten the destruction of the foliage. The leaves affected with the dropsy lose their healthy green color, become at first yellow only in spots or blotches, but finally so throughout.

Occasionally a plant is so afflicted that it grows but feebly, and while pushing the normal number of leaves they remain small and are badly specked before unfolding. The whole plant has a very sick and stunted appearance, and, of course, is worthless. Plants that are spotted in a less severe manner may recover after a time when removed out of doors. The dropsy seems to be the worst in early spring after the young plants are in the pots and six inches in height, bearing a dozen leaves or so.

The most frequent form of the trouble is when the translucent dots are along the veins; this being true in particular of those plants which suffer most and are dwarfed beyond their fellows. Occasionally the leaves will be only partially unfolded, and the upper border brittle and without its normal color; but as a rule the blotches and pimples are quite evenly distributed, that is, no one-half or quarter being affected to the exclusion of the other parts.

It is true that in some leaves the parts bearing the bulk of the specks are between or farthest from the veins, while in others the trouble is quite generally confined to the veins. This may be a varietal effect or possibly due to age of leaf when first afflicted. Again, sometimes the blotches are exceedingly irregular in outline and in others almost circular and quite uniform.

The reason for this unhealthy condition of the pelargoniums is most likely to be found in the circumstances under which they are being grown. Prof. Atkinson has met with a similar trouble which he calls Œdema of the Tomato and treats fully in a recent Station Bulletin. He concludes that the tumors of the tomato plant are due to the excess of water favored by insufficient light, that is, a wet soil and a soil temperature near that of the air. The long nights, short days and cloudy weather of late winter, induce the dropsical trouble, especially with a wet warm soil, thus making

root action excessive. The remedy would seem to be in providing a cooler, dryer soil with increased light for the aerial parts, whenever possible.

BYRON D. HALSTED.

### Contributions to American Bryology, III.

BY ELIZABETH G. BRITTON.

#### NOTES ON THE NORTH AMERICAN SPECIES OF ORTHOTRICHUM.

A. Those with superficial stomata.

*ORTHOTRICHUM OBTUSIFOLIUM*, Schrad. Crypt. Gew. 14 (1796).

Though, as its name implies, the leaves of this species are generally blunt, yet Austin collected specimens on trees in a swamp, at Jordansville, N. Y., on December 15, 1879, having the "leaves either obtuse, or acute or even apiculate on the same stem." I have verified this statement, and also observed that the perichætal leaves are occasionally even acuminate, as seen on specimens recently collected by me on the Pocono Mountain, Pennsylvania, the specimens being in fruit, and the leaves bearing the propagula and dense papillæ, which are characteristics of this species.

Although it generally grows on trees, especially poplars, and has been collected on elms along highways, and on old apple trees, yet Austin also gathered it on limestone fences, Sussex Co., N. J., and on stone walls, Herkimer Co., N. Y. These specimens are smaller and darker green than usual, for Canadian and Western specimens as well as most European ones are often light yellow with stems 1–2 cm. long. This species is probably more common in the Eastern States than is supposed, but on account of its depauperate size and frequent sterility is seldom collected.

*ORTHOTRICHUM STRIATUM* (L.) Hedw.

*O. leiocarpum*, Br. & Sch. Br. Eu. t. 220 (1837).

Sullivant and Lesquereux distributed this species as number 183, Musci Bor. Am., Ed. II., 1865, mixed with *O. affine*, presumably from two localities, as the label reads: Hab. in iisdem cum